

Gastric trichobezoar: case report and review

Tricobezoar gástrico: relato de caso e revisão

Aron Rodrigues de Moraes de Oliveira¹, Odil Garrido Campos de Andrade², Danielle Arabi Lopes¹, André Garrido Campos de Andrade³

ABSTRACT

Gastric trichobezoar is a rare condition and is more frequently observed in young female patients with behavioral disorders. Severe complications are uncommon but carry a high mortality rate if left untreated. Initially, the symptoms are nonspecific and insidious, making diagnosis challenging, often only being identified incidentally in endoscopic and radiological studies or when complications require hospitalization. The reported case is of a male patient with no reported psychiatric history, who presented initially with nausea and vomiting, progressing to an acute obstructive abdomen due to complications of gastric trichobezoar. The patient showed good recovery following surgical intervention and stabilization in the Intensive Care Unit.

Keywords: Bezoar; Trichobezoar; Acute abdomen.

¹ Escola Superior de Ciências da Saúde (ESCS), Brasília, Distrito Federal, Brazil.

² Clínica Médica pelo Hospital Universitário de Brasília (HUB), Brasília, Distrito Federal, Brazil.

³ Universidade Católica de Brasília, Brasília, Distrito Federal, Brazil.

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Dr. Claudemiro Quireze Jr.
Hospital das Clínicas da Universidade Federal de Goiás
Goiânia/GO, Brazil.

Corresponding Author:

Aron Rodrigues de Moraes de Oliveira
Hospital Alvorada, Brasília, Distrito Federal, Brazil.
Email: aronmoraes1@gmail.com

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RESUMO

O tricobezoar gástrico é uma afecção rara e é observada mais frequentemente em pacientes jovens do sexo feminino com distúrbio comportamental. Complicações graves são incomuns e de alta mortalidade sem tratamento. Inicialmente a sintomatologia é inespecífica e insidiosa, dificultando o diagnóstico, o que muitas vezes só é feito através de achado incidental em estudos endoscópicos e radiológicos, ou quando as complicações levam o doente ao atendimento hospitalar. O caso relatado é de um paciente do sexo masculino, sem antecedente psiquiátrico relatado em atendimento inicial, que iniciou quadro de náuseas e vômitos e evoluiu com abdome agudo obstrutivo devido a complicações do tricobezoar gástrico e apresentou boa evolução após abordagem cirúrgica e estabilização em Unidade de Terapia Intensiva (UTI).

Palavras-chave: Bezoar; Tricobezoar; Abdome agudo.

INTRODUCTION

The human digestive system, despite its complexity, is unable to digest certain substances. These undigested substances can accumulate in the gastrointestinal tract, forming foreign bodies known as gastric bezoars¹.

The classification of these compounds depends on the substance that forms them, with phytobezoars being composed of plant material, pharmacobezoars consisting of medications, while trichobezoars are hair entanglements².

The incidence of bezoars is considered rare. It is likely that the cases reported in the literature do not accurately reflect the true incidence of this condition, ranging from 0.068 to 4.8%³. Most trichobezoar patients are young women in their twenties, often with some form of psychiatric disorder such as trichotillomania (a disorder characterized by hair-pulling) and trichophagia (a condition in which the patient ingests their own hair)^{1,4}.

Despite the low incidence of trichobezoars, the mortality rate can reach up to 30% without treatment, with a higher likelihood of being due to gastrointestinal bleeding or acute abdomen perforation⁵.

Their formation is not necessarily related to gastric emptying dysfunction or speed. Once formed, their growth occurs with the accumulation of food, which facilitates bacterial colonization³.

The finding is often incidental in imaging exams, as the condition can be subclinical for years. When symptoms do occur, they can appear suddenly and are nonspecific, such as abdominal pain, nausea, vomiting, a feeling of gastric fullness, anorexia, and weight loss. The clinical presentation can progress to gastrointestinal bleeding if there is a concomitant peptic ulcer or tissue necrosis due to increased local pressure, which is more common in patients with a history of abdominal surgery⁶. Less commonly, it can lead

to complications such as an acute obstructive abdomen, gastrointestinal perforation, peritonitis, pancreatitis, and intestinal intussusception⁷.

As one of the complications, intestinal obstruction can occur, which is classified by the level of obstruction (small or large intestine), the degree of obstruction (complete or incomplete), and involvement of blood circulation in the organ wall. Due to the obstruction, surgical treatment is necessary to achieve relief. The instituted surgical method varies according to severity. Conservative surgeries, such as laparoscopic surgery, are reserved for cases of acute abdomen without vascular compromise^{8,9}.

The treatment is initiated based on the severity of the condition¹⁰. In complicated cases, surgical treatment with laparotomy and manual removal is the method of choice. When there are mild symptoms, a chemical dissolution method can be employed. If there is no response or if there are moderate to severe symptoms due to the extent of the bezoar, an endoscopic approach is used to fragment and remove the foreign body¹¹.

CASE REPORT

A 16-year-old male patient sought the emergency room (ER) accompanied by his mother due to a three-day history of diarrhea without mucus or blood, associated with nausea and vomiting. During the initial evaluation, he did not present any vital sign abnormalities and was maintaining his usual fluid intake, so he was discharged with instructions.

The diarrhea stopped. However, there was a progressive worsening of the nausea and vomiting. The patient's overall condition deteriorated, leading to drowsiness, a fall from his own height, but without a loss of consciousness, and an episode of vomiting with hair ingestion one day before returning to the ER.

He was readmitted to the ER eight days after the onset of symptoms. He presented a severely compromised overall condition, was drowsy, with a Glasgow Coma Scale score of 14, capillary blood glucose of 51 mg/dL, peripheral oxygen saturation of 72%, severe dehydration, and respiratory distress with a respiratory rate of 28 breaths per minute but without signs of respiratory distress. His heart rate was 132 beats per minute, and he had a flat abdomen with reduced bowel sounds, deep epigastric tenderness, but without signs of peritoneal irritation.

Due to the tachypnea and hypotension, a sepsis protocol was initiated. The patient received antibiotics within the first hour, including ceftriaxone and metronidazole. Hemoculture and urine culture were collected before antibiotic administration. Oxygen therapy was initiated via a nasal cannula, and laboratory tests were performed. The patient was closely monitored in the emergency department.

During observation, he deteriorated with persistent vomiting and hypotension (75/52 mmHg), needing the initiation of noradrenaline to achieve hemodynamic stability. The patient's level of consciousness improved, and he did not complain of abdominal pain. A reassessment of the physical examination revealed an abdomen without signs of peritoneal irritation.



Figure 1. Abdominal CT scan with an image suggestive of a gastric trichobezoar causing intestinal obstruction.

Source: Author's own repository.

In the review of the patient's previous medical history, the mother reported that the patient had undergone psychological counseling during childhood due to trichophagia from the ages of 5 to 8, but had no prior episodes of intestinal obstruction.

After initial stabilization, a CT scan of the head, chest, and abdomen was performed, followed by transfer to the ICU. The abdominal CT scan (Figure 1) revealed material suggestive of a trichobezoar in the stomach and jejunum, causing intestinal obstruction. To confirm the diagnosis, an upper endoscopy (UGIE) was indicated.

On the same day of admission, the patient underwent an UGIE for gastric decompression, during which 2000 ml of fecal-smelling stasis was aspirated from the esophagus, with no passage into the stomach. This necessitated an exploratory laparotomy for disimpaction, which revealed a trichobezoar that completely filled the gastric chamber, causing obstruction, with a second trichobezoar obstructing after 30 centimeters from the Treitz angle (Figure 2). The loops had a reddish and edematous appearance with hemorrhagic suffusion.



Figure 2. Removed trichobezoars.

Source: Author's own repository.

The decision was made to perform an enterotomy to remove a 10-centimeter trichobezoar, along with a 15-centimeter longitudinal gastric incision for the extraction of the trichobezoar, which had taken on the shape of the organ, measuring approximately 20 centimeters. After the surgical procedure, the patient was readmitted to the ICU and placed on mechanical ventilation with an orotracheal tube.

The patient underwent successful weaning from mechanical ventilation and was extubated within 24 hours without complications. Weaning from vasoactive drugs was initiated and tolerated, with discontinuation occurring 48 hours after initiation. Exclusive parenteral nutrition was started after complete withdrawal of noradrenaline. A dual-route diet was initiated, with the introduction of the oral route five days after starting parenteral nutrition. The antimicrobial regimen was completed after seven days of administration, and parenteral nutrition was discontinued 24 hours after the initiation of the oral diet, with the patient maintaining an exclusively oral intake.

The patient was discharged from the ICU following clinical improvement and was transferred to a regular ward, where he was assessed by the psychiatric team and started on Risperidone. He was discharged from the hospital 16 days after admission with outpatient follow-up with the gastroenterology and psychiatry teams.

DISCUSSION

a bezoar is the impaction of foreign material in the gastrointestinal tract (GI), originating from the ingestion of various substances. Trichobezoar is the second most common variant of this condition¹²⁻¹⁷.

The first report of a trichobezoar in humans was made incidentally during an autopsy in 1779, as described by Baudamant, and the first surgical removal of a trichobezoar was performed in 1883 by the surgeon Schonborn^{1,18,19}.

Trichobezoar is formed as a result of trichophagia, the habit of ingesting hair, often accompanied by trichotillomania, a compulsion to pull out hair strands^{20,21}. Although the first description of trichotillomania dates back to 1889, its complications only gained significant recognition in the late 20th century after it was classified as a behavioral disorder in the Diagnostic and Statistical Manual of Mental Disorders^{22,23}.

Trichophagia occurs more frequently during adolescence but is not exclusive to this age group, and it can occur at any age. It is more prevalent in females and rare in young males^{24,25}.

It is often associated with other psychiatric comorbidities, such as depression, mood disorders, social phobia, or anxiety disorders. In some cases, the diagnosis is made in the emergency room due to complications from a trichobezoar²⁶.

According to Zeraatian (2015)²⁷, gastric trichobezoar is rare, and the success of treatment depends on early diagnosis and recognition of complications, with intestinal obstruction being its most common presentation. In

the early stages, when the trichobezoar is confined to the stomach, it may generate few or no symptoms, and suspicion arises when there are dyspeptic symptoms (epigastric pain, nausea, and vomiting) associated with a known history of trichotillomania. As the trichobezoar grows, part of the distal tail can break off, migrate, and impact the small intestine, causing obstruction^{28,29}.

When not recognized, the continued habit of ingesting hair causes the trichobezoar to increase in weight and size, raising the risk of severe complications such as gastric ulcers, gastrointestinal bleeding, obstruction, and perforation, putting the patient at high risk of death if not identified²⁹⁻³¹.

Upper endoscopy is the preferred diagnostic method for gastric bezoars due to its ability to visualize and identify the foreign body's components. In selected cases, UGIE can be used to apply treatment measures, such as mechanical fragmentation and removal of the foreign body or direct administration of lytic enzymes that can dissolve the identified component^{1,4,19}.

Treatment success with a conservative approach depends on the size and time of trichobezoar formation. In most cases, less invasive treatment with UGIE is unfeasible due to the size and rigidity of the foreign body²⁹.

For large trichobezoars associated with complications, the surgical approach involving gastrotomy or enterotomy is the method of choice. Depending on the complications, it may be necessary to resect the affected part of the intestine. After the foreign body is removed, treatment aims to prevent recurrence through a multidisciplinary approach involving psychiatry, psychology, and gastroenterology teams^{7,14,19,20}.

Laparoscopic surgery, also known as minimally invasive surgery, is an innovative method of surgical approach that utilizes small incisions and cameras to perform internal procedures. This technique offers several advantages compared to traditional approaches, such as open surgery. The procedure is carried out through small incisions, significantly reducing tissue trauma. Patients undergoing laparoscopic surgeries often experience a faster recovery with less postoperative pain and smaller scars. The clear visualization provided by cameras minimizes the risk of bleeding. Although laparoscopic surgery is considered a minimally invasive approach with various advantages, there are some situations where it may be contraindicated or pose specific risks. In cases of obstructive acute abdomen with vascular compromise and hemodynamic instability, laparoscopic surgery may not be the best choice due to the need for rapid assessment and intervention, as well as the complexity of handling vascular complications. The decision between surgical approaches should be based on the specific clinical assessment of each patient, considering the severity of the condition and the risks associated with each procedure^{8,9}.

The reported case involves a male patient whose family did not provide information about his previous history of trichophagia, which had never been treated. The initial presentation of partial intestinal obstruction can be confused with other conditions, as diarrhea combined with vomiting is a common complaint in the emergency department. In

cases where there are no vital sign abnormalities and the patient can hydrate themselves, an expectant approach with symptomatic treatment and hydration measures is typically taken. Non-invasive gastroenteritis and food poisoning often present similar symptoms and do not warrant further investigation in mild cases.

Since the patient was stable during the initial emergency department visit, no imaging tests were performed.

Upon returning to the emergency department, he presented a severe condition and developed an acute abdomen perforation associated with septic shock and electrolyte imbalance, which are serious complications with a high morbidity and poor prognosis. The abdominal condition worsened and led to systemic involvement, necessitating an abdominal CT scan. In the emergency department, imaging tests aid in the diagnosis of abdominal pathologies and are recommended for patients with complaints of abdominal pain, changes in bowel habits, nausea, and vomiting.

After the diagnosis was established, emergency surgery was required, as well as mechanical ventilation and vasoactive drugs for clinical stabilization. The patient responded satisfactorily to the instituted measures and was discharged from the hospital 16 days after admission without any lasting sequelae.

CONCLUSION

Understanding more about trichobezoar helps healthcare professionals to better manage these patients and to identify the condition at an early stage, reducing the incidence of severe complications that carry a high morbidity and mortality risk if left unrecognized^{29,30,32,33}.

Gastric trichobezoar should be among the differential diagnoses when encountering patients with gastrointestinal complaints associated with a history of psychiatric disorders.

Recognizing the association between gastric trichobezoar and behavioral alterations underscores the need for a multidisciplinary approach to prevent worsening and recurrence. This reinforces the importance of psychiatric and psychological care that should be implemented. It is essential to evaluate the patient comprehensively and individually, taking into account their biopsychosocial aspects.

The ethical prerequisites for research involving human subjects outlined in Resolution No. 466 of the National Health Council were adhered to. The participant signed the Informed Consent Form with authorization for the release of images.

AUTHOR'S CONTRIBUTION

Author contributions are structured according to the taxonomy (CRediT) described below:

Conceptualization, Investigation, Methodology, Visualization & Writing – review & editing: Aron Rodrigues de Moraes de Oliveira. *Project administration, Supervision & Writing – original draft:* Odil Garrido Campos de Andrade; André Garrido Campos de Andrade; Danielle Arabi Lopes.

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